ATMOSPHERIC ENVIRONMENT

Part B: Urban Atmosphere

Volume 25B 1991



List of Contents and Author Index

PERGAMON PRESS

Oxford New York Seoul Tokyo

ATMOSPHERIC ENVIRONMENT

EXECUTIVE EDITORS

Dr P. Brimblecombe, Norwich, U.K. Dr M. Benarie, Grenoble, France Prof. R. D. Bornstein, San Jose, CA (with special responsibility for *Urban Atmosphere*)

Dr J. P. Lodge, Jr, Boulder, CO Dr A. S. Lefohn, Helena, MT Dr P. J. Lioy, Piscataway, NJ Dr H. B. Singh, Moffett Field, CA

ASSISTANT EDITOR

Dr J. F. Austin, Norwich, U.K.

FORMER EXECUTIVE EDITOR

Dr D. J. Moore (1967-1989)

PART B: URBAN ATMOSPHERE

EXECUTIVE EDITOR

ASSOCIATE EDITOR

Prof. R. D. Bornstein, San Jose, CA Prof. T. Oke, Vancouver, Canada

EDITORIAL ADVISORY BOARD

Dr Y. R. Adebayo, Nairobi, Kenya (African Editor)

Prof. P. Artaxo, São Paulo, Brazil

(South American Editor)
Dr M. E. Berlyand, St Petersburg, Russia (East European Editor)

Prof. T. J. Chandler, Orpington, U.K. Dr W. F. Dabberdt, Boulder, CO

(North American Editor/PBL Meteorology)

Prof. B. Givoni, Los Angeles, CA

(North American Editor/Urban Planning)

Prof. Y. Goldreich, Ramat-Gan, Israel (Middle East Editor)

Prof. E. Jaurequi, Mexico City, Mexico (North American Editor/Urban Climate)

Dr G. Jendritzky, Freiburg, Germany (West European Editor/Biometeorology)

Prof. T. J. Lyons, Murdock, Australia (Australian Editor)

Prof. T. Nishizawa, Ibaraki, Japan (Asian Editor/Urban Climate)

Dr W. Ott, Stanford, CA

(North American Editor/Indoor Pollution)

Prof. B. Padmanabhamurty, New Delhi, India (Indian Sub-Continent Editor)

Prof. S. Sani, Selangor, Malaysia

(Southeast Asian Editor)

Dr S. E. Schwartz, *Upton*, *NY* (North American Editor/Chemistry)

Dr R. Taesler, Norrkoping, Sweden

(West European Editor) Dr H. Ueda, Fukuoka, Japan

(Asian Editor/Air Pollution)

Prof. F. H. M. van de Ven, Delft, The Netherlands

(West European Editor/Hydrology)

Publishing and Advertising Offices: Pergamon Press Ltd, Headington Hill Hall, Oxford OX3 0BW, U.K. Tel: (0865) 794141, Fax: (0865) 60285.

Subscription rates

Annual institutional subscription rate (1992): Part A: General Topics £1110.00 (US\$2015.00); Part B: Urban Atmosphere £170.00 (US\$310.00). All subscribers to Part A will automatically receive Part B. Two-year institutional rate (1992/1993): Part A £2109.00 (US\$3828.50); Part B £323.00 (US\$589.00). Sterling prices are definitive. US dollar prices are quoted for convenience only, and are subject to exchange rate fluctuation. Personal subscription rate for those whose library subscribes at the regular rate (1992): Please contact your nearest Pergamon Press office. Prices include postage and insurance and are subject to change without notice. Subscription enquiries from customers in North America should be sent to: Pergamon Press Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A. and from the remainder of the world to: Pergamon Press Ltd, Headington Hill Hall, Oxford OX3 0BW, U.K. Subscription rates for Japan are available on request.

Part A published monthly plus additional issues in February, April, June, August, October and December. Part B published quarterly in March, June, September and December.

Whilst every effort is made by the Publishers and Editorial Board to see that no inaccurate or misleading data, opinion or statement appear in this Journal, they wish to make it clear that the data and opinions appearing in the articles and advertisements herein are the sole responsibility of the contributor or advertiser concerned. Accordingly, the Publishers, the Editorial Board and Editors and their respective employees, officers and agents accept no responsibility or liability whatsoever for the consequences of any such inaccurate or misleading data, opinion or statement.

Second class postage paid at RAHWAY, NJ. Postmaster send address corrections to Atmospheric Environment, c/o Pergamon Press Inc., 660 White Plains Road, Tarrytown, NY 10591-5153, U.S.A.

CONTENTS OF VOLUME 25B

Number 1

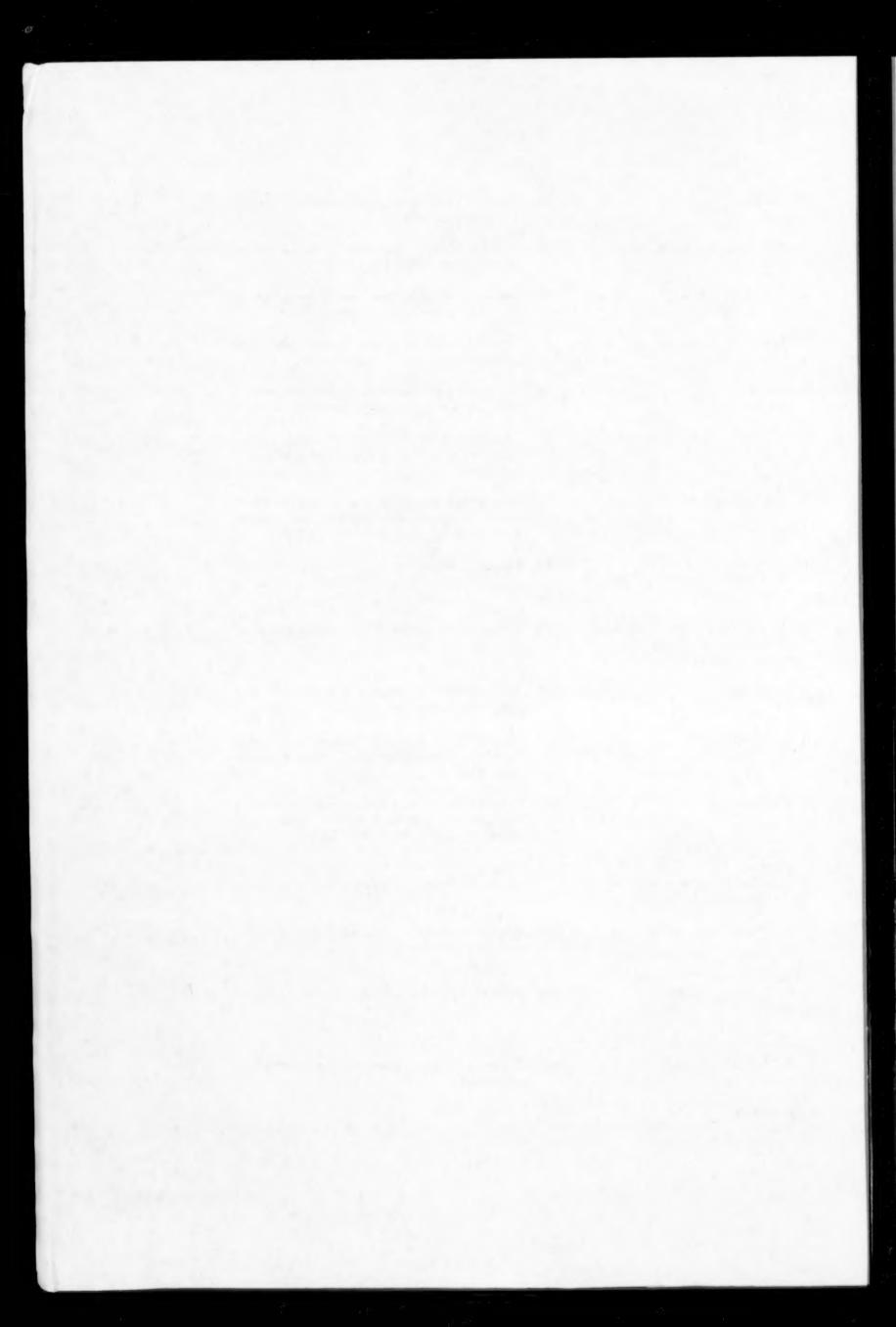
D. F. Gatz	1	Urban precipitation chemistry: a review and synthesis
A. Yoshida	17	Two-dimensional numerical simulation of thermal structure of urban polluted atmosphere (effects of aerosol characteristics)
S. Shim and G. R. Carmichael	25	The STEM-II acid deposition and photo- chemical oxidant model—II. A diagnostic analysis of mesoscale acid deposition
P. E. Korsog and G. T. Wolff	47	An examination of urban ozone trends in the northeastern U.S. (1973–1983) using a robust statistical method
Jiang Dahe	59	A Lagrangian backward trajectory model and its application to the study of acid rain in the Emei Mountainous District
Wangteng Tsai, Y. Cohen, H. Sakugawa and I. R. Kaplan	67	Hydrogen peroxide levels in Los Angeles: a screening-level evaluation
M. A. Cohen, P. B. Ryan, J. D. Spengler, H. Özkaynak and C. Hayes	79	Source-receptor study of volatile organic compounds and particulate matter in the Kanawha Valley, WV—I. Methods and descriptive statistics
M. A. Cohen, P. B. Ryan, J. D. Spengler, H. Özkaynak and C. Hayes	95	Source-receptor study of volatile organic compounds and particulate matter in the Kanawha Valley, WV—II. Analysis of factors contributing to VOC and particle exposures
B. D. Tripathi, A. Tripathi and K. Misra	109	Atmospheric dustfall deposits in Varanasi city
J. M. Waldman, P. J. Lioy, M. Zelenka, L. Jing, Y. N. Lin, Q. C. He, Z. M. Qian, R. Chapman and W. E. Wilson	113	Wintertime measurements of aerosol acidity and trace elements in Wuhan, a city in central China
R. Infante and I. L. Acosta	121	Size distribution of trace metals in Ponce, Puerto Rico air particulate matter
S. Okamoto and K. Kobayashi	133	Characterization of aerosols in the Kashima area—a summary of IPCAJ Kashima SPM study
C. Bowler and P. Brimblecombe	143	Battersea power station and environmental issues 1929–1989
Book Review (T. J. Chandler)	153	

Number 2

F. Kimura and S. Takahashi	155	The effects of land-use and anthropogenic heating on the surface temperature in the Tokyo Metropolitan area: a numerical experiment	
R. E. Davis	165	A synoptic climatological analysis of winter visibility trends in the mideastern United States	
M. Segal, J. R. Garratt, R. A. Pielke, P. Hildebrand, F. A. Rogers, J. Cramer and A. Schanot	177	On the impact of snow cover on daytime pollution dispersion	
D. K. Pissimanis, G. S. Karras and V. A. Notaridou	193	On the meteorological conditions during some strong smoke episodes in Athens	
A. Matzarakis and H. Mayer	203	The extreme heat wave in Athens in July 1987 from the point of view of human biometeorology	
K. T. Hindy	213	Silicon, aluminium, iron, copper and zinc levels in desert soil-related dust deposits in Cairo	
A. J. Jakeman, J. Bai and G. H. Miles	219	Prediction of seasonal extremes of one-hour average urban CO concentrations	
H. Rothweiler, P. A. Wäger and C. Schlatter	231	Comparison of Tenax TA and Carbotrap for sampling and analysis of volatile organic compounds in air	
L. Paoletti, M. Diociaiuti, M. Falchi, D. Pisani and G. Ziemacki	237	Quantitative analysis of airborne breathable particles: a comparison between different analytical techniques	
K. P. Gladstone, H. Niki,P. B. Shepson, J. W. Bottenheim,H. I. Schiff and H. S. Sandhu	243	Photochemical oxidant concentrations in two Canadian prairie cities: model evaluation	
J. S. Bower, J. E. Lampert, K. J. Stevenson, D. H. F. Atkins and D. V. Law	255	A diffusion tube survey of NO ₂ levels in urban areas of the U.K.	
J. S. Bower, G. F. J. Broughton, M. T. Dando, A. J. Lees, K. J. Stevenson, J. E. Lampert, B. P. Sweeney, V. J. Parker, G. S. Driver, C. J. Waddon and A. J. Wood	267	Urban NO ₂ concentrations in the U.K. in 1987	
Short Communication H. Bravo A., R. Camacho C., G. Roy-Ocotla R., R. Sosa E. and R. Torres J.	285	Analysis of the change in atmospheric urban formaldehyde and photochemistry activity as a result of using methyl-t-butyl-ether (MTBE) as an additive in gasolines of the metropolitan area of Mexico City	

Number 3

B. Givoni	289	Impact of planted areas on urban environmental quality: a review
Y. Goldreich and M. Kaner	301	Advertent/inadvertent effect on 'rainfall center' displacement in northern Israel
C. S. B. Grimmond, H. A. Cleugh and T. R. Oke	311	An objective urban heat storage model and its comparison with other schemes
C. Yagüe, E. Zurita and A. Martinez	327	Statistical analysis of the Madrid urban heat island
H. Swaid	333	Nocturnal variation of air-surface temperature gradients for typical urban and rural surfaces
G. S. Brager, A. V. Nero and C. L. Tien	343	Transport and deposition of indoor radon decay products—I. Model development and validation
G. S. Brager and K. L. Revzan	359	Transport and deposition of indoor radon decay products—II. Influence of environmental conditions
J. C. Chuang, G. A. Mack, M. R. Kuhlman and N. K. Wilson	369	Polycyclic aromatic hydrocarbons and their derivatives in indoor and outdoor air in an eight-home study
L. Paoletti, M. Falchi, D. Batisti,M. P. Carrieri, M. G. Petrelli,C. Ciallella and G. Donelli	381	Mineral lung burden of an urban population
T. S. Shively	387	An analysis of the trend in ground-level ozone using non-homogeneous Poisson processes
A. Y. Ali-Mohamed	397	Estimation of inorganic particulate matter in the atmosphere of Isa Town, Bahrain, by dry deposition
K. T. Hindy	407	Contribution of cane bagasse used as a fuel in the sugar industry to changes in outdoor and indoor air quality in Middle Egypt
A. Bardeschi, A. Colucci,V. Gianelle, M. Gnagnetti,M. Tamponi and G. Tebaldi	415	Analysis of the impact on air quality of motor vehicle traffic in the Milan urban area
C. N. Hewitt	429	Spatial variations in nitrogen dioxide concentrations in an urban area
Technical Note		
F. W. Lipfert, S. Cohen, L. R. Dupuis and J. Peters	435	Relative humidity predictor equations based on environmental factors
Short Communication		
N. M. Aleksić and N. Balać	443	Modeling of air pollution from the power plant ash dumps
Corrigendum	447	



AUTHOR INDEX

Acosta, I. L. 121 Aleksic, N. M. 443 Ali-Mohamed, A. Y. 397 Atkins, D. H. F. 255

Bai, J. 219
Balac, N. 443
Bardeschi, A. 415
Batisti, D. 381
Bottenheim, J. W. 243
Bower, J. S. 255, 267
Bowler, C. 143
Brager, G. S. 343, 359
Bravo A., H. 285
Brimblecombe, P. 143
Broughton, G. F. J. 267

Camacho C., R. 285 Carmichael, G. R. 25 Carrieri, M. P. 381 Chandler, T. J. 153 Chapman, R. 113 Chuang, J. C. 369 Ciallella, C. 381 Cleugh, H. A. 311 Cohen, M. A. 79, 95 Cohen, S. 435 Cohen, Y. 67 Colucci, A. 415 Cramer, J. 177

Dahe, J. 59 Dando, M. T. 267 Davis, R. E. 165 Diociaiuti, M. 237 Donelli, G. 381 Driver, G. S. 267 Dupuis, L. R. 435

Falchi, M. 237, 381

Garratt, J. R. 177
Gatz, D. F. 1
Gianelle, V. 415
Givoni, B. 289
Gladstone, K. P. 243
Gnagnetti, M. 415
Goldreich, Y. 301
Grimmond, C. S. B. 311

Hayes, C. 79, 95 He, Q. C. 113 Hewitt, C. N. 429 Hildebrand, P. 177 Hindy, K. T. 213, 407

Infante, R. 121

Jakeman, A. J. 219 Jing, L. 113

Kaner, M. 301 Kaplan, I. R. 67 Karras, G. S. 193 Kimura, F. 155 Kobayashi, K. 133 Korsog, P. E. 47 Kuhlman, M. R. 369

Lampert, J. E. 255, 267 Law, D. V. 255 Lees, A. J. 267 Lin, Y. N. 113 Lioy, P. J. 113 Lipfert, F. W. 435

Mack, G. A. 369 Martinez, A. 327 Matzarakis, A. 203 Mayer, H. 203 Miles, G. H. 219 Misra, K. 109

Nero, A. V. 343 Niki, H. 243 Notaridou, V. A. 193

Okamoto, S. 133 Oke, T. R. 311 Özkaynak, H. 79, 95

Paoletti, L. 237, 381 Parker, V. J. 267 Peters, J. 435 Petrelli, M. G. 381 Pielke, R. A. 177 Pisani, D. 237 Pissimanis, D. K. 193

Qian, Z. M. 113

Revzan, K. L. 359 Rogers, F. A. 177 Rothweiler, H. 231 Roy-Ocotla R., G. 285 Ryan, P. B. 79, 95

Sakugawa, H. 67 Sandhu, H. S. 243 Schanot, A. 177 Schiff, H. I. 243 Schlatter, C. 231 Segal, M. 177 Shepson, P. B. 243 Shim, S. 25 Shively, T. S. 387 Sosa E., R. 285 Spengler, J. D. 79, 95 Stevenson, K. J. 255, 267 Swaid, H. 333 Sweeney, B. P. 267

Takahashi, S. 155 Tamponi, M. 415 Tebaldi, G. 415 Tien, C. L. 343

Author Index

Torres J.	, R. 2	85
Tripathi,	A. 10	9
Tripathi,	B. D.	109
Tsai, W.	67	

Waddon	, C. J.	267
Wäger,		
Waldma	n, J. N	1. 113
Wilson,	N. K.	369
Wilson,	W. E.	113